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THE CHILDREN'S CENTER--A MICROCOSMIC HEALTH, EDUCATION, AND WELFARE UNIT. PROGRESS REPORT.

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FOUNDED TWO YEARS AGO AS A RESEARCH AND DEMONSTRATION DAY CARE CENTER FOR VERY YOUNG CHILDREN, THE CHILDREN'S CENTER HAS UNDERGONE CHANGES, (1) FROM INVOLVING 25 CHILDREN AGED SIX MONTHS TO THREE YEARS OF AGE TO INVOLVING 85 CHILDREN AGED SIX MONTHS TO FIVE YEARS OF AGE, (2) FROM INCLUDING ONLY LOW INCOME HOMES IN WHICH THE MOTHER WORKS, TO INCLUDING MIDDLE-CLASS HOMES IN WHICH THE MOTHER DOES NOT WORK, (3) FROM FULL DAY CARE TO ALLOWING HALF-DAY ATTENDANCE. THE CENTER IS ORGANIZED AROUND THREE ON-GOING PROGRAMS. THE HEALTH PROGRAM HAS TWO PARTS (1) A LONGITUDINAL STUDY WITH EMPHASIS ON THE PROMOTION OF THE IDEAL WELL-CHILD CARE PROGRAM AND (2) A NURSERY SCHOOL HEALTH PROGRAM WITH EMPHASIS ON FAMILY EDUCATIONAL ACTIVITIES. THE EDUCATION PROGRAM IS INVOLVED WITH DEVELOPING A LOGICAL AND SYSTEMATIC INSTRUCTIONAL PROGRAM FOR CHILDREN WITHIN THE CENTER'S AGE RANGE--EVEN AS YOUNG AS SIX MONTHS. THE WELFARE PROGRAM PROVIDES INDIVIDUALIZED SERVICES TO THE FAMILIES OF THE CHILDREN'S CENTER, WITH HOME VISITS, PERSONAL INTERVIEWS, AND GROUP PARENT ACTIVITIES. (INCLUDED ARE CHARTS FOR THE TYPICAL DAY IN EACH OF THE CENTER'S SUBGROUPS AND A MODEL FOR STRUCTURING THE EDUCATIONAL ACTIVITIES FOR A DEVELOPMENT-FOSTERING ENVIRONMENT.) (EF)

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THE CHILDREN'S CENTER--A Microcosmic Health, Education, and Welfare Unit

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THE CHILDREN'S CENTER--A Microcosmic Health, Education, and Welfare Unit

Bettye M. Caldwell[1] and Julius B. Richmond[2]

The task of chronicling the development of the Children's Center is not unlike that of the hero of 1984 whose assignment was to rewrite history daily. In the present instance, the constant rewrite is necessary not in order to bring past action into line with current policy but rather to describe the rapid evolution of both policy and action in a project the scope of which was only partially realized by its founders at the time of its inception. At the time of this writing, only two years after the launching of the program, some rather important changes have been made in several basic areas of functioning. For example, whereas the program was originally intended to involve children ranging in age from six months to three years, it now covers the age range of six months to five years. The original goal was to run a small pilot project for 25 children, and there are now 78 children enrolled (with a few additional children being processed for intake weekly up to a maximum of 85 within present staff and space limitations). Although there was never any intent to limit the sample entirely to disadvantaged children, it was anticipated that most of the children would come from low-income families in which the mother was employed. Now, however, by design children from families representing a wide range of economic and social backgrounds are accepted, and there is no requirement that the mother be employed. The program was originally housed in an antiquated and dilapidated duplex; now it has been moved into the educational building of a local church where all rooms are spacious, clean, and bright. Originally all participating children remained under care for the full day; now half-day attendance is permitted and encouraged.

To some extent there has even been a change in the authors' conceptualization of the task of any day care center.[3] Obviously the most unique feature of this program was its intent to offer group-oriented care for the child under three. To quote from a section of the original proposal submitted to the Children's Bureau: "The basic hypothesis to be tested by this demonstration unit is that an appropriate environment can be created which can offset any developmental detriment associated with maternal separation and possibly add a degree of environmental enrichment frequently not available in families of limited social, economic, and cultural resources." Key terms in that statement were <u>offset</u> <u>detriment</u> and <u>possibly</u> add environmental enrichment--a somewhat negative and decidedly conservative statement of goals. Now, with two years of experience which has provided

daily feedback as well as an accumulation of data for large-scale intermittent evaluations, we are minimally worried about the need to avoid detriment and are unabashedly aware of the potential offered by the program for environmental enrichment of a magnitude and nature unavailable in most programs. And we are happy to re-write our brief history to bring it in line with this new orientation.

In spite of these changes of format and conceptualization, there has been no change in the task with which the investigators were charged by the granting agency: to develop a research and demonstration day care center for very young children. From the outset it was expected that the Center would fulfill both of these roles, and every attempt has been made to see that neither role is slighted. Nor has there been any change incompatible with the original goal of the project and with the hypothesis which led to its inception. To quote again from an earlier publication:

> " . . . an attempt will be made to program an environment which will foster healthy social and emotional development as well as provide stimulation for cognitive growth during a developmental period that is critical for its priming. The program is based on the proposition that, while environmental supplements for deprived children may be beneficial at any age, sensitivity to enrichment declines with age. Thus the program is geared to the very young and is designed to provide whatever environmental supplements are needed to decrease the subsequent visibility of underprivileged children--to forestall the verbal and motivational deficit which can be observed on the first day of formal schooling and which all too frequently remains like a symbolic scarlet letter about their necks until the frequently premature termination of their school careers."
>
> (Caldwell and Richmond, 1964)

Although the Children's Center is still very young, it is old in comparison to other programs having similar objectives. Therefore the authors are frequently requested to describe the operational details of their program in order to have them available in the public record to be reacted to as possible guidelines for other groups wishing to develop programs. With a disclaimer that any pretense to closure is implied, such a description is offered in this paper. In addition, some evaluative data which relate to results after one year of operation will be presented.

Fall, 1966 Program Statistics

Location and Physical Plant

Since September of 1966 the Center has had a somewhat schizophrenic physical identity. The administrative offices, the medical examining room, and the major research labs are still housed in the original building, shown in Figure 1. The children's groups, however, are housed in the educational building of the University Methodist Church, located some five blocks from the old building which still serves as headquarters for the project. A diagram of the lay-out of the regular

Insert Figure 1 about here (Omitted from this copy)

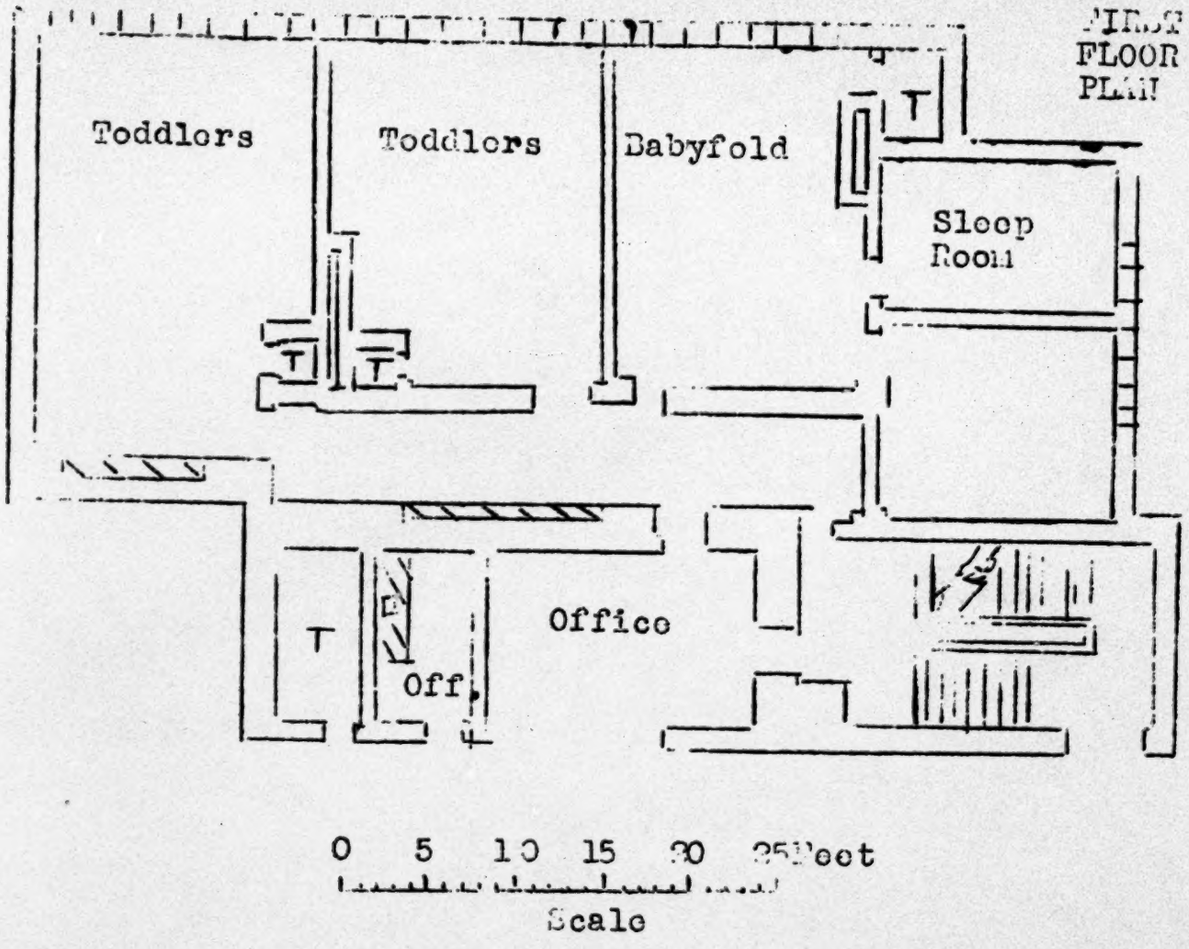
space available in the church property is presented in Figure 2. However, in

Insert Figure 2 about here

addition to the eight classrooms and two offices shown in the diagram, the church also permits use of a modern kitchen and dining area and a large gymnasium where the children can engage in vigorous indoor play in extremely cold weather (of which there is a considerable amount in Syracuse). The building is relatively new, and all rooms are clean and spacious and artistically decorated.

Although the esthetic contrast between the new quarters and the old is great, the arrangement has certain limitations. For example, each Friday afternoon the educational program is largely shelved while all teaching personnel help prepare the classrooms for church usage on Sunday. In some of the classrooms this is minimal, whereas in others it means virtually a complete change-over of the equipment. In the Infant group, for example, all cribs, playpens, and feeding chairs have to be carried out and those belonging to the church restored to their regular places. The simple fact that the staff is willing to carry out these extra labors attests to the general morale and to their conviction about the importance of their work. Outdoor play space is limited, but again community cooperation has helped solve the problems. Adjacent to the church is the National Guard Armory, which owns a wide cement driveway and parking area between the two buildings. Arrangements were made to fence off this driveway, and now the children have an outdoor area for bike riding. Space for other types of outdoor activities is still inadequate, and small groups of children are from time to time carried up to play in the yard of the administration building or on a sm all city playground situated three blocks from the church.

CHILDREN'S CENTER



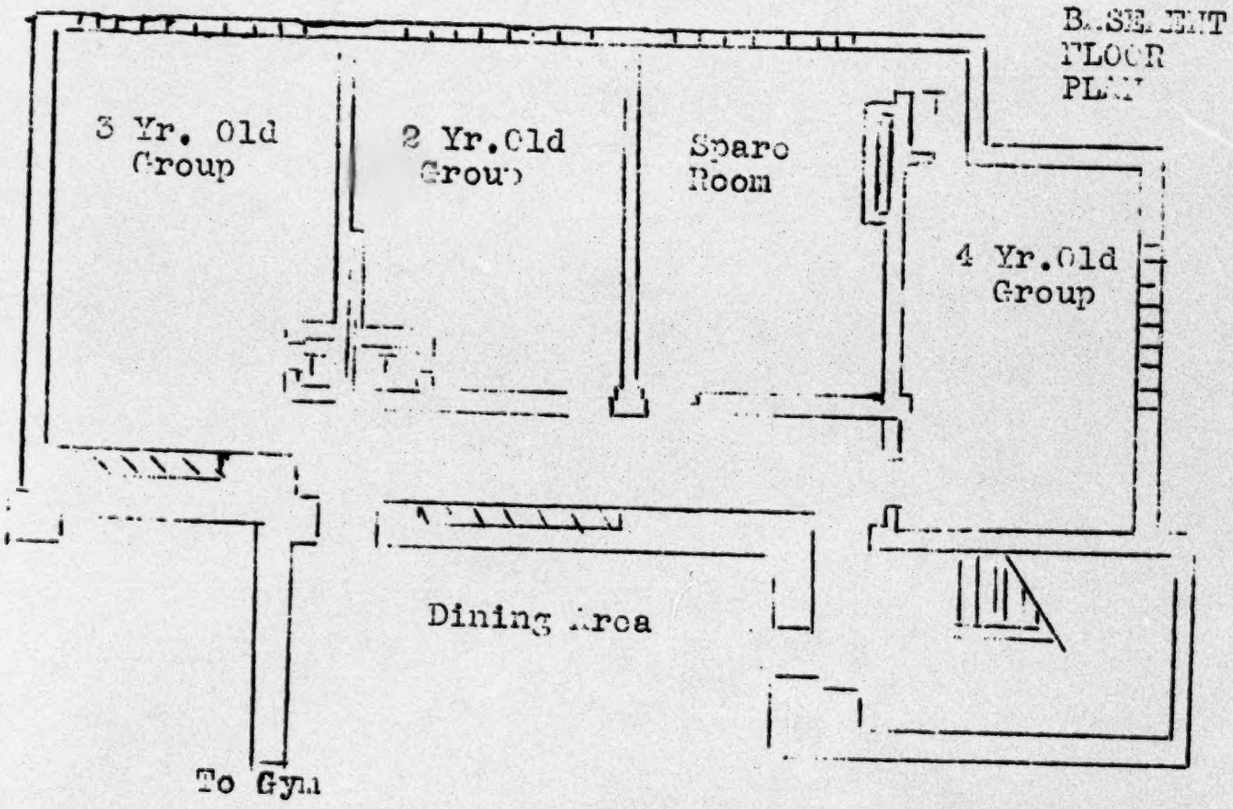


Figure 2. Lay-out of space for current Children's Center Program.

A final point should be made about space utilization before moving on to another topic; this is done only because the authors realize that similar programs are being contemplated and planned in many sections of the country. Unless a group is especially fortunate, space is likely to be at a premium. As the potential value of such programs is likely to be debatable for another decade or so, "ideal" physical plants simply may not be possible for some time to come. However, it is hoped that this will not deter qualified groups from developing programs which, once their value is proven, will have no difficulty securing quarters. No one will take umbrage at the comment that the building in which our program functioned for two years and which still houses our research staff is barely habitable; it was a common joke around the Medical Center that we obtained rights to the building just one hour before the bulldozer was scheduled to demolish it. It contained an unbelievable number of rooms for the total square footage; it was largely vertical, with stairs that appeared out of nowhere and which required constant vigilance on the part of the teachers to avoid potentially serious accidents (gates set up to protect children from the stairs were so numerous that one visitor felt compelled to compare the classrooms to cages in a zoo); its supposed "staff lounge" in the basement literally required crawling on hands and knees to get up or down the stairs; it had settled so badly on the steep hillside on which it was situated that special nonright angle screens had to be made, and all heavy furniture gradually drifted toward the northwest corner of the building! And yet it was structurally sound and capable of meeting fire and health department codes with a minimum of remodeling.[4] The size of the original physical plant was significantly enlarged by the addition of a construction trailer, which housed the youngest infants enrolled in the Center. Such units are extremely versatile and should be considered by anyone needing temporary quarters for a program. It is the general consensus of the staff that the experience gained in operating the program these two years has more than compensated for the difficulties involved in working in a less than perfect physical plant. We would not trade our two years of functional life for any promissory note for an architecturally ideal building; the parents and children involved in our program appear to share this value judgment.

The Sample

Table 1 presents a summary of certain demographic and program characteristics of the children enrolled in the Center program as of November 1, 1966. As mentioned earlier, a few additional children on the waiting list are currently being

Insert Table 1 about here

processed for admission so that by early 1967 there will be 85 full-day and half-day children enrolled, representing 70 full-time equivalents. This current sample represents a notable increase over the 25 children aged six months to three years enrolled prior to October 1, 1966. In view of the authors' basic hypothesis that the optimal time for beginning an enrichment program was prior to age three, one might legitimately inquire as to the reasons for expanding the age limits upwards. The answer would come under the category of "natural history" in the area of social welfare. Within a year's time there were several "graduates" of the program, and the Center and its children (and their families) had quickly formed a mutual attachment pattern. Although there were day care facilities for children older than three already in existence in the community, all of these facilities already had long waiting lists and could not accommodate any of the children graduating from our program. And, no matter how valuable the enrichment of that one year might have been, development is not static; the children could not be expected to sustain any gains they might have made if they were then summarily released from the program only to return to their own homes or to a probably less than optimal neighborhood baby-sitting service. Of course, such an expansion could not be accomplished without securing additional funds and without more space. Both of these details required considerable time, and actually a full year elapsed between the time the expansion into the three- and four-year groups was contemplated and the time it became a reality. This response to the needs of the children provides a good example of the way in which service needs and research ideas function symbiotically; in this project they have always complemented one another to the mutual advantage of both.

A fairly major change associated with the expansion involved the addition of a half-day group. The authors were originally very interested in offering part-time care in order to accommodate mothers who did not work full-time. The few attempts made along these lines did not work out too well, however, and the practice was discontinued temporarily. The children enrolled on this basis all had

Table 1. Description of sample of families and children in the Children's Center observation and enrichment samples. Data as of Nov. 1966.

	SEX		ETHNICITY		AGE IN YEARS					SOCIO-ECONOMIC CLASS			
	BOYS	GIRLS	WHITE	NEGRO	< 1	1-2	2-3	3-4	4-5	LOWER[1]	MIDDLE[2]	UPPER[3]	TOTAL
LONGITUDINAL STUDY GROUP	24	37	42	19	17	39	5			14	43	4	61 children
			38	18						13	39	4	56 families
ENRICHMENT GROUP	37	41	46	32	11	14	17	17	19	17	27	34	78 children
			39	20						11	22	26	59 families
WAITING LIST FOR ENRICHMENT GROUP	21	21	21	21	3	4	7	17	11	4	22	16	42 children
			20	16						3	17	16	36 families
TOTAL	81	92	104	69	28	53	29	34	29	30	88	55	173 children[4]
			97	54						27	78	46	151 families[5]

Notes: 1. Consistently lower class in six occupation-education groupings. Essentially both parents unskilled, neither a high school graduate.

2. The "middle" class here was a group rated as lower class on some scales and middle class on others. Mainly semi-skilled and skilled workers.

3. Consistently middle class on the ratings. Father is a white collar worker (or mother is white collar worker in mother-only families) and both parents are high school graduates.

4. Includes 8 children who are in both the longitudinal and enrichment groups.

5. Includes 7 families who are in both the longitudinal and enrichment groups and 2 families in both the longitudinal group and waiting list.

mothers whose part-time employment involved something like two full and one half-day of employment spread out erratically through the week. Perhaps by chance, all the children involved in such arrangements were among the youngest in the sample, and it was the judgment of most personnel that these part-time babies did not adjust as well as the others in their same group. It was felt that perhaps they lacked the internal cognitive resources with which to organize temporal events and that the experience of being at home some days and at the Center on others led to feelings of uncertainty in the infants. Therefore, perhaps erroneously and perhaps after too little experience with too small a sample, the practice was discontinued. With the recent expansion, all the children who were ever let out of the program for any reason were given top priority in the new admissions, and one of the children who had attended only part-time as an infant came back into the program as a two-year-old. She is still a somewhat irritable child who cries more than other children in her present group. Thus our judgment about the ill effects of an erratic part-time program, while logical enough, may have been more influenced by temperamental characteristics of this one child than should have been the case. Beginning with the new admissions in the fall of 1966, part-time attendance was not only permitted but encouraged. However, the part-time arrangement had to involve the same part (usually half) of every day that the Center was in operation. Thus if a child attended five half-days per week, these had to be five mornings or five afternoons, not a morning one day and an afternoon the second, and so on.

It is the conviction of the authors that this addition of a part-time program is extremely important for several reasons. For one reason, the personal and societal values of part-time work for women are such that this pattern deserves encouragement on a large scale. Part-time day care will be essential if such an employment pattern becomes established. But there are other reasons for being interested in part-time day care. Although the potential dangers of maternal separation were probably overstressed for a decade or so, and although the general consensus of scientific opinion at present is that there are no major hazards associated with this practice if certain emotional safeguards are provided, no one--certainly not the present authors--wishes to develop programs that will disrupt the child's primary family relationships. Yet at the same time, everyone concerned with the welfare of young children wishes to avoid permitting intra-family characteristics to deny a child the opportunity to develop to his full potential. If having certain experiences during the first few years of life is

indeed crucial for such optimization, then it may be necessary to plan for environmental supplements beginning within the first few weeks or months of life. If this is ever done on a large scale--and the present authors believe that it will be--then information about the precise quantity of enrichment necessary in order to give the child the experiences he needs to prime his cognitive development without in any way disrupting his primary family relationships is vital. The simple fact that infants and young children sleep for a large part of the day lends credibility to the assumption that full-day enrichment is not necessary. And certainly, on a cost per child basis, twice as many part-time children can receive the potential benefits of such a program. It had been planned with our current expansion that fully half of the children would be enrolled on a half-time schedule. However, the pressing need of so many of the families contacting the Center for full-day care could not be disregarded, and approximately two-thirds of the children attend all day. (Parenthetically it should be noted here that, among the older children at least, there appears to be a kind of extra status associated with all-day attendance. This probably has more to do with the fact that the all-day children have lunch at the Center than to anything else. However, several mothers have made subtle or direct requests to have their children remain all day, offering as a final ploy some such statement as "But he so wants to take his nap with the other children," or "If he could just eat lunch with the other children some day when another child is absent.")

Another major change associated with the current expansion is the deliberate inclusion of middle class children in the sample. Actually there have always been a fair number of middle class (only if determined by education and <u>potential</u> income rather than actual income) children enrolled in the program--a fact which will become more obvious when the data on preliminary findings are presented. But in the early days of the program, almost all middle class children accepted had some type of family difficulty--e.g., severe marital discord, divorce or separation, spouse in mental hospital, alcoholism, etc. They were all accepted on a pro ten basis, with the explanation given the parents by the Center social worker that the program had been established primarily to serve disadvantaged families but that their child could participate in the program for six months, by which time it was assumed that community agencies would have discovered and accepted the Center and refer a steady supply of appropriate families. This did indeed occur,

but at the time the middle class children were taken out of the program, several parents denied any memory of having been alerted to the possibility. One mother, in protesting the unfairness of such a policy, asserted dramatically that she would sell all her books in order to qualify!

Such a policy was in effect unfair, but still another factor prompted the investigators to want to expand the program in such a way as to be able to take in middle class children. In the decade prior to the establishment of the Center, major progress had been made in the direction of racial and economic integration of schools. Quite apart from the moral and ethical considerations that provided impetus for such integration, there was also the very practical concern that young children learn a great deal from one another and that in integrated schools the horizontal diffusion effects of language styles, motivation, work habits, and attitudes toward education would make substantial contributions to the educability of the underprivileged child. Thus it did not seem wise to deny the children in our program the opportunity of experiencing such pacer contacts during their early years any more than it would later. And while the Center had always been racially balanced, for a period it was quite over-weighted with children from families with extremely limited resources. Therefore, when funds and space became available for an expansion, by policy middle class children were admitted.

One final point should be made in reference to the sample, as described in Table 1. It will be noted that acquisition of control cases has tended to lag behind the rate of intake of children into the enrichment program. To those familiar with the problems inherent in doing such research that fact will come as no surprise. But it will also be noted that at present a control group for the two older groups has not been assembled. All the research time this fall has been consumed with carrying out an initial evaluation of the children recently admitted to the program. However, plans are under way for the assembling of a comparable control group for the older children, and it is anticipated that such a group will be available by early in 1967. In research such as this, a time lag control group, while less than optimal, is nevertheless permissible. Unfortunately such an arrangement has been necessary from the beginning in this project. That is, controls for the infants have come into the study approximately one year after the first group of infants was admitted to the Center. This rather strange arrangement was occasioned by the fact that controls for the enrichment children came from a longitudinal study of early learning of children in their own families

being conducted by the authors, data collection for which began at approximately the same time as the establishment of the first enrichment group. Originally it was thought that the first year of operation of the program should be entirely for practice and that no formal evaluation would be made. By the end of a year, the children participating in the longitudinal study, who joined the project at one year of age, would be old enough to serve as controls for the youngest group of Center children. Controls for the older children were identified from among those who applied for admission to the Center but could not be accepted. However, as the approved life of the project was very short, it seemed unwise to let any group go through the program without making some formal attempt to evaluate the outcome. Therefore, the one year time lag control group plan was adopted, and it is felt that this will provide a satisfactory baseline of comparison for the children participating in the Center enrichment program.

Staff

As such programs are so new on the American scene, there is no standard staffing pattern likely to be encountered. Therefore the Children's Center staff is described not as any sort of model pattern but merely as one that has worked in the present instance. The major requirement of any potential staff member is that he or she be interested in the welfare of young children and families and have some knowledge about the process of child development. There are today many academic and professional sequences which offer training in human development, and therefore representatives of many fields have contributions to make in such programs. In the present program the two principal investigators represent the areas of developmental psychology and pediatrics; research and service personnel represent such areas as child development, education, social work, experimental and developmental psychology, pediatrics, nursing, and sociology.

Questions are frequently asked about the total number of persons required to operate a program of this size, a question which is always surprisingly difficult to answer. Part-time work is encouraged, and thus at one time there may be more people on the premises than another time. At the present time, there are 44 people on the Children's Center staff, representing 32 full-time equivalents. Those 32 positions represent the following assignments: 1 director, 2 educational supervisors, 1 research coordinator, 2 medical staff (1 pediatrician and 1 nurse), 1½ social workers, 4½ research staff, 14 caretaking positions, 2 secretaries, and 4 supportive personnel (kitchen, maintenance, chauffeuring). At present all but three of these are paid from the Center budget, with the remaining three paid a training stipend from the local community action program of the Office of Economic Opportunity.

Lest the reader hasten to the conclusion that it thus takes one adult for approximately every three children in the program, reference is made to the data presented in Table 1. For it will be recalled that a large number of children and families are participating in the basic longitudinal study but not in the enrichment program. This additional group received its well child care from the Center's medical staff; case work as needed is offered by the Center social workers; and the children and families are frequently assessed by one of the learning procedures used in the study. Thus a substantial proportion of staff time goes to this group whose children are not enrolled in the enrichment program. From the standpoint of the number of persons necessary for care-taking, our experience would suggest that for a comfortable program a 1:4 ratio of staff to children must prevail during all waking hours for the children under three, a ratio of 1:5 or 1:6 for threes, and 1:6 or 1:7 for the fours. Obviously the number of adults needed will vary with the situation, with the type of activity carried out at any particular time, and with the degree of self-help of which the children are capable.

Although all these people are needed to make the program live, there is no question but that the teachers and caretakers occupy a special role. Unless each one fully understands the purposes of the program and the strategy behind each activity, and unless each is in sympathy with and dedicated to the operating principles of the program, the program cannot possibly work. Unfortunately few persons who can fill these vital roles are available by training. Furthermore, there is probably no extant academic training program that will simultaneously give students the knowledge they need about human development and specific educational techniques, the zeal for participation in social action programs, and at the same time not overwhelm them with the amount of time they will spend changing diapers, pulling boots off and pushing them on, comforting and rocking, carrying and lifting. Fortunately, however, many persons who have all the necessary qualifications are available and perhaps waiting to be discovered and given whatever on-the-job training is necessary. And, to be sure, a constant training program for all our staff--including the director--is in process. One of the complications of an all-day program, however, is that it is extremely difficult to find time for the staff to have formal meetings. As the staff is composed largely of women, most of whom have family responsibilities for all after-work hours, evening meetings are difficult if not impossible. And not even the use of volunteers to relieve regular staff at special times solves the problem, as the only logical time for such relief

is during the nap period. Yet as they drift off to sleep, perhaps as no other time, children want their special people, not just anyone. Thus the teachers are often involved in patting or rocking the last child to drift off to sleep just as the first one begins to awaken.

The physical demands of such a job are also not inconsiderable. Many jokes have been written about the impossibility for an adult of duplicating all the movements of a single two-year-old in a given day. Imagine then, the difficulty of keeping up with 17 to 20 of them! It is partly because of the fatigue factor involved that part-time teaching assignments are favored, in addition to the Center policy of trying to make attractive positions available to women who otherwise would not be able to make a contribution to their fields. Initially it was felt that, at least in the younger groups, having one person available to the children throughout the day would be an absolute necessity, even though other part-time personnel might come and go. Experience has shown that this is not necessary, however; the children get quite used to the "changing of the guard" and show no difficulty adjusting to the change.

Since the summer of 1966 the care-taking staff for each group has included some assistant teachers or teacher's aides. The assistants are given a fairly intensive one-week training program prior to a group assignment, with on-going supervision provided thenceforward. On the agenda for the immediate future is the development of a training program for teaching assistants who will be available to fill positions in the community at large, not just in this program.

Financial Support

As is indicated on the title page, support for this program comes primarily from the Children's Bureau, Welfare Administration, Social Security Administration, Department of Health, Education, and Welfare. The basic longitudinal learning study has been supported by a research grant from the National Institute of Mental Health, U.S. Public Health Service, Department of Health, Education, and Welfare. The approximate annual budget is $250,000, with 87% of that going toward personnel. Obviously, to operate a program such as this, the main thing one needs is people.

When given that figure, interested people are often aghast and make some such remark as, "But doesn't a lot of that go to support the research? Couldn't you operate for a lot less money if it were not a research project?" This is actually a difficult question to answer, but probably the best approximation is: not a

great deal less. For example, until recently the director's salary came entirely from other research and academic funds; in a purely service program such an arrangement would not be likely. Furthermore, such research staff persons as the public health nurse spend many many hours in what would be considered service functions. One research staff person functions regularly as a substitute teacher, and all research staff interact a great deal with the children, often lending a helping hand when they happen to see that one is needed when observations are being made in one of the classrooms. One male research staff member devotes three hours a week to "special projects" with the three-year-old group, which seems to have an abundance of boys who need more contact with males. Also, were it not for the research and training orientation of the Center, the students assigned to the Project from courses offered in the College of Home Economics would not be available. Nor would the Center be considered a desirable placement opportunity for students in the Crusade for Opportunity's job-training program. Thus the research half of the research-and-demonstration assignment more than carries its weight in making a financial, albeit a somewhat invisible, contribution to the program.

An accurate cost-accounting for such a program is difficult to make and difficult to generalize to other regions even if made accurately. For example, as 87% of the operating budget is needed for salaries, a key determinant in the cost of a program within any particular region will be the salary schedule within that region. In spite of these limitations on generalizability, the authors have attempted to derive an estimate of the per capita cost of such a program as that offered in the Children's Center. If one subtracts maximally an estimate of $40,000 as the approximate cost of the research half of the research and demonstration composite, and assumes that, by streamlining certain supervisory and training functions, 90 children could be cared for (50 full-day, 40 half-day, representing 70 full-time equivalents), and assuming that the ordinary child care year will involve 260 child care days (5 days per week for 52 weeks), one comes up with an estimated cost per capita per day of $11.54. If such programs can now demonstrate their capacity to foster development and help prepare the children for more adequate citizenship, the cost will be trivial indeed.

Program of the Center

As in the title the Center has been perhaps somewhat presumptuously referred to as a microcosmic health, education, and welfare unit, perhaps the best way of organizing a description of the on-going program would be in terms of these three components of the total program.

The Health Program

The health program of the Center is carried out by a staff pediatrician who is available in the Center approximately half-time, by three second year pediatric residents who see children regularly on a weekly basis throughout the year, and by four staff nurses. Two of the nurses function primarily as nurse-teachers; one is a public health nurse involved mainly in home visits, and one is regularly assigned to assist in the various well-child clinics and in the daily health supervision of the children in the nursery school. In addition, many faculty members from the Department of Pediatrics attend individual child conferences and offer their help in the management of specific problems.

Although there are certain standard medical procedures carried out with all children and all staff, the routines differ depending upon the project population subgroup in which a particular child belongs. That is, there are essentially four programs of health supervision offered to children representing the following population subgroups: (1) participation in the longitudinal study; (2) transfer into the nursery school from the longitudinal study; (3) enrollment in the nursery school with no previous participation in the longitudinal study but with no private family physician; (4) enrollment in the nursery school with no previous longitudinal study participation and with a private family physician. Each of these will be described in turn.

Health Program of the Longitudinal Study. It will be recalled that these children are participating in a study of infant learning as it relates to patterns of family care and that major controls for the enrichment program come from this group. Contact with the families is established via a letter and a brochure sent to the parents of new infants registered in the records of the Syracuse Health Department. The new parents contacted are those who reside within the census tract areas identified as low socio-economic areas. Undoubtedly the chief lure for participation in the learning study is the availability of free well-child care. While free care has been available through many other resources in the community

for many years, there have been certain "extra" features offered in the Children's Center program that undoubtedly increased its appeal to prospective participants. For example, the parents have the opportunity to see the same pediatrician at each visit and to talk at much greater length than was usually possible in most clinics; a staff social worker is available immediately if needed; free transportation is provided; and a very friendly and informal atmosphere prevails. At present no more newborns are taken into the project via this pattern; now only the children taken in at some previous time are still receiving care. Clinics are held six times per week. These are very small affairs, with usually only one or two children brought in during any clinic period.

The medical routine for this group of children follows the pattern established in the main Pediatric Outpatient Clinic of the Upstate Medical Center. Children are seen at one, two, three, four, five, six, eight, ten, and twelve months during the first year, quarterly during the second year, and semi-annually during the third year. No children in this group have as yet reached the age of three. This schedule is regarded locally as ideal for well-child care, but in spite of all the physical and interpersonal supports offered to the families, attendance is often erratic. At each visit, the children are assessed on one of the learning procedures used in the longitudinal study or else the mothers are interviewed regarding some aspect of child rearing. This arrangement gives the participating pediatric house officers an opportunity to observe developmental testing and some of the conditioning and learning procedures carried out with the children by the research staff. At the termination of each clinic session, a short briefing session is held by all staff who participated in that family contact. This gives different members of the unit an opportunity to compare notes, ask questions, and plan for future contacts with that family. No sick child care is provided these children unless, as is somehow often the case, the child is ill in some way on the day of his well-baby visit. However, the Center social worker and staff pediatrician help acquaint the families with community health resources. These children are given top priority for all openings in the nursery school. However, not all the families have needed or wanted the day care, and so referrals from other community agencies and directly from parents are accepted. This means that for different children in the total program we have different amounts of information about pre-enrichment experience and early health and medical care.

The Nursery School Health Program. This encompasses the three remaining groups described above, with procedures varying somewhat according to the circumstances preceding enrollment. For those children who have participated in the longitudinal study, essentially no intake medical work-up is done; for all others, including those with private physicians, an initial history and physical is done by the Center staff pediatrician. Apart from daily screening and minor first aid treatment, no further routine medical procedures are done with the private group. However, the staff pediatrician usually attempts to establish rapport with the family physician, and requests for diagnostic work or treatment are made either through the parents or through direct consultation with the private physician.

Most of the children enrolled in the school are from homes where health standards and medical attention have been suboptimal. It is shocking and alarming to note how many families apply whose children have not had any consistent well-child care or any standard immunizations. Therefore, every attempt is made to provide medical guidance and assistance as indicated by the judgment of the staff physician, the nurses, the social worker, and the individual teachers. It is hoped that a significant amount of health education will occur through the continuing association between the medical staff and the parents. Every attempt is made to be flexible and accommodating while at the same time not permitting the parents to abrogate their responsibilities.

As long as the Center had only 25 children enrolled, brief rounds were made by the pediatrician daily. With 30 children, however, this is impossible. Therefore an important function of the staff pediatrician is to help alert the teaching staff to signs and symptoms that need medical attention. Each head teacher now has the responsibility of checking her children every morning. If there is anything unusual about the child's behavior or appearance, the principal of the nursery school is contacted, and she in turn arranges to have the child seen by one of the staff nurses. The nurse or principal then contacts the staff physician, who will see the child as soon as possible. If the child appears seriously ill, an attempt will be made to contact the parent and have the child taken home. If the parent is not available or cannot care for the child at that time, the child is kept in a somewhat isolated space on the school premises until such time as he can be sent home. Neither of our buildings has privided space for an isolation room, and the staff has had to work out all sorts of creative improvisations. The frequency with which really sick children are sent to school by their parents has been surprising--and this is as true of the better educated as of the less educated parents. Perhaps a mother who has to be at work at a certain time or will other-

wise lose income constructs a perceptual defense against the signs of illness in her child. The only medication given in the Center is aspirin to reduce fever (after a child has been examined and the necessary tests made, or if the child's private physician cannot see him for several hours) or medications being administered a child as part of some prescribed therapeutic regimen. In the latter instance, the mother is expected to communicate with the nurse or teacher and either bring in or send the child's medicine with the bus driver. A record is kept of all medication given the children on the premises.

The management of accidents and injuries varies with the apparent severity of the accident. The teacher may handle minor ones (bumps, scratches, nosebleeds), generally washing the area with soap and water and possibly applying a band aid for its psychological therapeutic effect. All such injuries receive a very casual treatment, however, in order to avoid having the child find too much secondary reward in the situation. The more serious ones (bumps on the head, the fairly common one with young children of falling and biting the lip, etc.) involve the same type of hierarchical screening procedure described above for illnesses--i.e., teacher, principal, nurse, physician. (So many levels of communication may sound cumbersome, but it appears essential if the necessary records are to be maintained. When all personnel and all records are once again in the same building, at least one step in the process can be eliminated.) Upon enrolling their children in the school, the parents sign a proxy statement authorizing the medical and administrative staff of the Center to act in their behalf in the event of an emergency. Even so, every attempt is made to find one or both parents in the event of a serious injury--which fortunately has not occurred very often in the history of the Center. (However, we have survived one minor automobile accident, two dislocated elbows, and three or four lacerations requiring stitches. In all cases but one, the parents have been very understanding and supportive.) The children are immediately transported, usually accompanied by a favorite teacher, a staff nurse or pediatrician, to the Emergency Room of State University Hospital, where any necessary diagnostic or treatment procedures are administered.

In addition to the prophylactic and therapeutic aspects of the medical program, the medical staff carries out many educational and consultative activities. For example, a yearly course in first aid management is offered to all teaching and research staff. Supervision of employee health is provided, although the actual diagnostic and/or therapeutic work is done elsewhere. Many valuable suggestions for maintaining high safety standards are made. One pediatrician on the

Upstate Medical Center faculty (Dr. George A. Lamb) is studying the spread of viruses and infections in the children. This research will have important implications for all future programs involving group care for young children. In short, the maintenance of a vital, dynamic medical program is essential to the success and continued growth of the program.

The Educational Program

The most unique, the most ambitious, and the most controversial aspect of the total Children's Center program involved the attempt to develop a logical and systematic educational program for children as young as six months. This attempt grew from the basic hypothesis that the first three years of life represent a critical period for the priming of cognitive development and that the experiences of this period exert a permanent influence upon the developing child. However, not all experiences can be assumed to be of equal value to the developing organism. Thus in order to accomplish a fair test of the primary hypothesis, some sort of theoretical model of the way experience influences the developing organism is essential. In many respects, the basic hypothesis was in jeopardy unless a successful strategy could be devised for arranging the environment in such a way that growth-inducing events would indeed occur and that, furthermore, the child would partake of them. Not an easy task, to be sure.

Guidelines for organizing an educational program for the child under three were virtually non-existent. During the period of approximately 1930-1950, nursery schools for two-year-olds had been operated at Vassar, California, and other outstanding early child development centers. However, most of these were dropped sometime during the fifties. Furthermore, as the nursery school movement spread within this country and lost its early link with the child development research centers, the field became less innovative and more conservative. Within the simultaneously developing day care field, group programs for children under three were strongly discouraged, and in some areas today they are still illegal.

Such descriptive material as can be found about these early programs for two-year-olds tends to deal primarily with the social and emotional needs of a child so young, with a possible exception being the book by Isaacs (1930). In fact, it is not unfair to imply that during the late fifties and early sixties a sure path to ostracism in the field of early childhood education was to emphasize the importance of the nursery school for influencing intellectual development. Debunking

the Iowa studies attempting to demonstrate intellectual gains associated with nursery school attendance became a popular sport for writers of texts in the field (see the commentary by Watson, 1959, pp. 502-505), and any implication that such an experience could have lasting cognitive effects was subject to ridicule.

A dramatic tide-turning that began with the publication of Hunt's monumental volume (1961), with the infectious spread of Bruner's dictum that any subject presented in an intellectually honest way could be taught to a child of any age (1960), with the increased dissemination of the important theoretical and experimental work of Piaget (1952), and with the realization that something had to be done to improve the educability of the disadvantaged child (Riessman, 1962). But while these (and many other) important formulations with implications for action were being introduced into the literature, all tended to stop short of planning the action--of designing specific experiences which would construct the bridge from abstraction to the concrete reality of every-day events. The one notable exception to this is the Montessori method (1912), but in its generally disseminated form it is not intended to be appropriate for children under two.

On the basis of such knowledge as exists about infant development, and with the help of the above-described theoretical positions about how experience is processed by the developing organism, a few general guidelines for translating theory into action were formulated. These involved making certain assumptions about factors that could be brought under the control of the social and experiential environment to foster optimal development. These assumptions represent different levels of generality and referent, but all have immediate implications for the planning of specific educational experiences. Before presenting them it should be stated that, from the standpoint of those who must create the daily environment, they still leave too much unsaid. However, the assumptions about growth-fostering experiences have been extremely useful in helping to provide a framework for the daily experiential program, and they are presented here in briefly annotated form.

1. <u>The development of a young child is fostered by a relatively high frequency of adult contact involving a relatively small number of adults</u>. This assumption may appear to contraindicate any sort of group care program; however, even within a group situation it can be implemented. Thus, particularly for the youngest group of children, an attempt is made to insure that most of the care for each child will be by the same member throughout the day and on consecutive days through the week. With rare exceptions, students (who might be on the premises only four to six hours per week) are not assigned to the youngest groups of children, and

most of the major care-taking personnel work full-day rather than half-day shifts. For at least 15 to 30 minutes per day, each infant is to be given the concentrated individual attention of one of the staff members, being taken out of the "baby fold" if possible. He may be held and rocked, read to, taken on a special errand in another part of the building, taken for a walk, play one of the carefully structured "learning games," etc. Every attempt is made to insure that this is a pleasant experience, and the teacher is encouraged to be sensitive to signs of waning interest or developing fatigue on the part of the child. Each child is to be cared for upon awakening and to be either fed or supervised during mealtime by the same person daily.

While this type of individualized care is part of our official body of policy, in actuality the desired consistency has never been achieved. That is, too many exigencies arise which often seem to make it impossible for the daily one-to-one session to occur or for the same person to be the primary caretaker throughout the day and from one day to the next. The authors, who admittedly do not have the responsibility of carrying it out, have never been convinced that the inability to bring this off is as much a function of time and schedule difficulty as it is that possibly the staff has never been fully persuaded of its importance. Sometimes it appears that an almost alarming group-think mystique pervades the staff, a situation which is probably adaptive but nevertheless a little threatening to whatever degree of individualism one manages to retain. In this context it should be mentioned that some teachers must of necessity be "floaters" who go from group to group as needed; however, others are assigned to specific groups and, except for the early morning or late afternoon periods when the children are regrouped to accommodate individual arrival and departure times, function almost exclusively within that particular group.

2. <u>The development of a young child is fostered by the deliberate provision of a learning environment that is both stimulating and responsive</u>. Here the learning environment is conceptualized as encompassing the <u>interpersonal</u>, the <u>experiential</u>, and the <u>physical-spatial</u> aspects of the child's world. A much debated issue in the field of education, particularly the early childhood field, is the extent to which the learning environment should be merely a passive milieu and the extent to which it should attempt actively to bring about certain developmental changes. By and large, the weight of conviction in the field of early childhood education has been on the milieu side of the debate. In the Children's Center program,

attempt is made to strike a balance between the two. There is a great deal of clear and deliberate stimulation for learning, but at the same time, many opportunities are provided for the child to select from his environment those aspects which he is some way needs or favors at any given moment. In practice, this means that throughout the day there are alternating opportunities for child- and teacher-initiated choices of activity and materials. The teacher-initiated activities may be either group- or individual-oriented; but, whichever they are, they are carefully planned in terms of providing the kinds of experiences regarded as valuable for children of particular developmental levels. The range of teacher-initiated activities is very great, and only a brief sample of particularly relevant ones will be mentioned here: reading books, playing lotto games, carrying an infant around and labeling different objects seen in the environment, art activities, playing learning games involving discriminations along relevant sensory dimensions (big-little, red-white, long-short, rough-smooth, etc.), singing, marching, playing group activity games (such as London Bridge), playing group word and attention games (such as Simon Says), etc. This is obviously an abbreviated list, as a complete one would involve the complete repertoire of teaching techniques available to nursery school teachers. In this context it should be mentioned that with children under three, it is not too difficult to adapt many of the classical techniques, and the teaching staff has shown considerable creativity in making such adaptations. For example, one of the teachers wanted to see if the infants would enjoy finger painting but feared that there would be entirely too much tasting of even the non-toxic paints and too much paint on the infant's body and clothes. Her very ingenious solution was to tint beaten egg whites with a few drops of food coloring and permit the children to spread this new art medium around on the feeding table trays. Needless to say, the children loved both spreading and eating the paint!

On the responsive side, the teachers are trained to use their attention as a powerful social reinforcer. With the infants, the caretakers emit a pleasing vocal and affective response every time the infant vocalizes--insofar as this is practical. Obviously as the child gets older, the reinforcement ratio drops to a lower and probably not entirely predictable rate. Whenever the child carries out any form of approved behavior, the adult will try to respond with an approving glance, a smile, a nod, a pat, and especially with some sort of remark. But social reinforcement also consists in giving bodily support (holding, snuggling, rocking,

carrying) and physical and psychological availability. The child's need for such types of adult response does not appear to diminish significantly during the first three years or so.

3. The development of a young child is fostered by an optimal level of need gratification. Although one must conjecture what the optimal level of gratification is for any child, it is probably safe to assume that it is defined by sufficiently prompt attention to needs so that the young organism is not overwhelmed, but not such prompt or complete attention that budding attempts at self-gratification are extinguished. Teacher vigilance is probably the most critical element for attempting to identify this level. Also important is a pace of activities that is not too rushed, giving the child enough time to permit his attention to any one task to play itself out but not so much time that he becomes bored or disorganized. As a sensitive teacher comes to know a child, she becomes alert to signs of mounting fatigue and imminent crises and can learn to guide him through such situations and avert major episodes of disruptive behavior. Teacher training and supervisory programs devote a great deal of time and effort to the heightening of such perceptiveness.

4. The development of a young child is fostered by a positive emotional climate in which the child learns to trust others and himself. While we do not wish to make it sound like a fetish, a standard piece of equipment in each classroom is an adult rocker. This is perhaps symbolic of the value attributed to positive, nurturant, and supportive contact between the adults and the children. As new teachers come into the program they are reminded of their crucial role in shaping the child's earliest concept of what "school" will be like; the child must develop a trust in his incumbent teacher and his present school as but the first in a long line of successors to follow. The teacher's behavior and the total school atmosphere will be crucial in determining whether the child will come to trust the positions represented and will decidedly influence what he learns during his encounters with the school program.

5. The development of a young child is fostered by an environment containing a minimum of unnecessary restrictions on his early exploratory attempts but a supply of natural restrictions that provide valuable feed-back data helpful in refining movements and actions. In order to create a safe environment for young children, a good many restrictions on freedom of movement are necessary. However, it is probably fair to claim that most parents go a bit beyond the call of safety in

maintaining such restrictions. Although it would be difficult to secure data to substantiate this contention, there is probably a class-biased and age-related pattern of restriction. That is, infants from low income families probably are permitted more freedom of movement simply because special cribs, chairs, and play pens cost a good deal of money. However, once a child begins to walk, the more people there are in the immediate environment and the more the house is crowded with objects (as tends to be the case when there are many people in a small amount of space), the more likely is there to be interference with the child's freedom of movement. In the Children's Center environment, we are fortunate in having enough staff so that play pens are seldom needed, and the children are placed down on the floor during most of their waking moments. All toys left down on low shelves are to be used by the child whenever he wishes; the few "untouchables" are either on high shelves or in storage cabinets outside the classroom. Chairs, stools, or big blocks are kept in obvious places to help the child realize how they can be utilized in problem solving and to provide him with kinesthetic feedback regarding his motor efforts.

6. <u>The development of a young child is fostered by the provision of rich and varied but interpretable (via stable people and previous history) cultural experiences</u>. The daily program of the Children's Center offers a rich fare for cultural intake. Many special visitors who function in various community roles come and visit the school and demonstrate in some way how they play their roles. During the year many field trips are made to worthwhile places in the community, with particular concentration upon places that the disadvantaged children in the sample would not be likely to visit otherwise. Always when such a visit is made, there is advance preparation for it and some kind of continuing discussion about the experience afterwards, plus choice of books and records that would help to reinforce the memory of the event. Pictures are taken and shown and discussed or displayed later. Always on such visits, the child is accompanied by one or more of the stable persons with whom he has an emotional relationship; it is assumed that, by their subtle valuation of the experience, it will be received by the child as an experience of value.

7. <u>The development of a young child is fostered by a physical environment that separates figure from ground and contains modulated amounts and varieties of sensory experience</u>. As is well known, inadequate sensory input during the early years is strongly implicated as one of the experiential factors involved in

the early learning deficit so often shown by the child who grows up in an environment of poverty. Thus in our environmental planning, every attempt is made to provide for variety along such dimensions as intensities of sensory input, color, shape, texture, sound patterns, etc. Also an effort is made to insure pleasant esthetic surroundings for the children in the program. Every now and then, the teachers change all the movable pieces of furniture in the room, on the assumption that the new position will help the children to become aware of objects that had been in their perceptual field but essentially "taken for granted." Favorite play materials are removed often enough to help keep the child's interest in them at a high level. Every mother is familiar with the phenomenon of her toddler who will work vigorously to throw out two dozen or more toys from a toy box and then, when the array of toys is scattered all over the floor, look up dismayed as though to say, "I haven't a thing to play with." Also, as part of regulation of the sensory input through the manipulation of the physical-spatial environment, the staff (with the help of the children) makes every effort to restore the room to order after any period of vigorous activity that may involve "homogenizing" the equipment routinely stored in the room. It is felt that, particularly for children whose home environments may be somewhat crowded or even chaotic, the maintenance of order is an essential aspect of the sensory environment and is crucial to help the child distinguish figure from background.

8. <u>The development of a young child is fostered by access to certain kinds of play materials</u>. There are many excellent play materials available today. In recent months scientists, educators, and manufacturers have been combining forces to develop play materials that would foster the development of eye-hand coordination, concept learning, language learning, motor skills, etc. Also within the past five years many delightful new books for young children have been published, although there is still a shortage for children in the one to three age range. In addition to obtaining a supply of an impressive array of commercial play materials, we have attempted to design and develop some which do not cost a great deal of money but which will help accomplish specific educational objectives. This has been done in order to encourage parents from low income families to realize that the most valuable play materials are not necessarily expensive. Eye-hand coordination can be developed just as effectively with empty spools and a coffee can with a small hole cut in the plastic top as it can with a toy that might sell for two dollars; size discrimination can be learned as readily with a set of measuring cups as with an expensive nesting toy. In addition to such home-made or improvised

toys, several staff members have written or done the art work for special books that fit certain topics being emphasized in the program. As indicated earlier, the creativity of the staff in devising new approaches to training and to the preparation of new materials has been a source of constant pleasure.

9. The development of a young child is fostered by the introduction of new experiences that provide an appropriate match for the child's current level of cognitive organization. This point has been repeatedly emphasized by Hunt (1964) as crucial for helping a child to move forward in his conceptual development. Learning experiences must not remain at the same level; nor can they afford to be too far ahead of the child's current cognitive organization. They must be just enough ahead to motivate him but not so far ahead as to be out of his reach. Making the environment live up to this principle requires great skill on the part of the instructors. It also requires, at the planning level, an awareness of the need to recycle learning experiences through the curriculum, always reintroducing them in such a way as to activate what has already been learned and to stimulate further learning and internal reorganization. Put in the language of Piaget's theoretical system, a new experience will be assimilated only if it is initially similar to previous experiences. Accommodation to the differences in the experience can occur only if it is not too different; otherwise it will simply be rejected as an unassimilable encounter with the environment. To make this principle concrete in terms of the educational program, we constantly reintroduce the concept of the self at an ever more complex level. The infants learn to point to their own eyes, nose, hands, etc., and then to do the same things with a large doll or a picture. The next group, all of whom can make these identifications, learns to say these words and develops some awareness of the function of the body parts. E. g., the teacher might play a game with them in which she briefly puts her hand over their eyes and says, "If we close our eyes, we cannot see." Then, upon removing her hands, "When we open our eyes, we see." At the next level the body parts will be introduced with rudimentary awareness of quantity--"Simon says touch your eyes; Simon says touch your noses. Oh, that's right, we have only one nose but we have two eyes." Such facts will be of little interest to the child who cannot identify eyes and the nose but will intrigue the child who can identify these parts and use his hands to point, but who may have given no thought to the fact that different body parts come in different quantities. It is probably in her skill at determining the proper "match" and maintaining it in her classroom activities that the skilled teacher most readily identifies herself.

The simple schematic model presented as Table 2 has been found helpful in directing attention to developmental goals and aspects of the growth-inducing environment which the caretaking staff can program. This conceptualizes the developmental goals of such a program as representing three broad areas--personal-social attributes; motor, perceptual, and cognitive functions; and culturally relevant knowledge--each exemplified by a number of specific intra-child developmental

Insert Table 2 about here

attributes. Then, it is assumed that one can influence the emergence of these attributes by some arrangement of the interpersonal, the experiential (the actual teaching-learning events or exercises), or the physical-spatial environment. Obviously all attributes are to some extent influenced by all three aspects of the environment which one can control; however, by and large it is assumed that the socio-emotional attributes are more influenced by features of the interpersonal environment; motor, perceptual, and cognitive attributes by the experiential and the physical-spatial environment; and culturally relevant knowledge perhaps equally by all three.

The planning of the total educational program is accomplished through meetings of the director and the total staff. Responsibility for coordinating the educational program across all developmental levels falls to the curriculum coordinator, who meets regularly with the director and the principal to plan specific activities which will implement one or another aspect of the curriculum model. "Quality control" of teaching is maintained by a regular program of classroom observation done by one of the three educational supervisory personnel--the director, the principal, and the curriculum coordinator. In addition to a fairly large number of planning conferences, biweekly conferences of the total staff are held at which time the progress of some individual child will be discussed by the total group. The original goal was to have each child in the program discussed at least twice a year in these conferences; however, with the larger number of children now enrolled this will no longer be possible. Smaller conferences involving only those persons involved in individual classrooms are being arranged as a necessary though less acceptable substitute. These are essentially clinical conferences, and consultants from such professional groups as pediatrics or clinical psychology or from community agencies having some contact with the families are regularly invited to attend.

Table 2. Schematic model for structuring the educational activities for a development-fostering environment.

Area of Influence:	Including:	Involves programming:
1. Socio-emotional attributes conducive to a positive orientation toward self, others, and events.	Sense of trust Positive self-concept Achievement motivation Persistence Social skills Sense of mastery Curiosity about environment Delay of gratification Independent behavior Joy of living	The interpersonal environment The experiential environment The physical-spatial environment
2. Motor, perceptual and cognitive functions that facilitate adaptive behavior	Motor agility and balance Fine muscle coordination Ability to attend and discriminate Classification and evaluation Formation of learning sets Problem solution Memory Attention span Communication ability Artistic expression	The experiential environment The physical-spatial environment The interpersonal environment
3. Culturally relevant knowledge	Words, phrases, sentences Storehouse of experiences	The experiential environment The physical-spatial environment The interpersonal environment

For those who would like to examine a "typical day" in the Children's Center and see these environmental guide lines translated into a daily schedule, a detailed table of representative activities for the various times of the day is presented as Appendix A. No pretense is made that the educational program is completely developed at this stage. The curriculum is constantly evolving, as ideas which appear unworkable are discarded and replaced by new ones. At this stage we feel that we have the essentials for spelling out in far greater detail a proposed program but choose to wait until more supportive data are available for anything more comprehensive than this general description.

The Welfare Program

The social work staff consists of two persons, one employed full-time and one three-fourths time. The social services offered to Children's Center families are decidedly individualized. One of the workers acts as an intake worker, interpreting the multiple functions of the Center to any parent making an inquiry or application and providing information about approximate waiting periods, etc. All parents with a child participating in the longitudinal study will be seen regularly by one of the workers. These appointments serve the combination purpose of obtaining research data and also providing service to the families; this opportunity to combine roles has proved most attractive to the workers who have served on the staff. At an early appointment, the social worker interviews the parents to obtain necessary demographic data on the families. At periodic intervals throughout the first two years, the workers conduct a structured interview with the mother designed to help determine the infant's strength of attachment to the mother and to other adults in the home environment. Also, on the research side, the social workers participate in the home visiting program, which again serves the double purpose of securing information about the level of stimulation available to the children within the home and serving as a resource to help the mother in such areas as utilization of community resources, home planning, seeking and coordinating medical services, and discussing patterns of child care.

Social services to families with children enrolled in the nursery school are somewhat more varied partly as a result of the diversity of economic and educational backgrounds represented by the school population and the varying extent to which the families are involved in other social agencies. As indicated earlier, many families are referred to the Children's Center for the day care service only, with the referring agency intending to continue all necessary social work with the

family. In such cases, the parents are nevertheless urged to participate in all group-oriented parent activities sponsored by the Center and to meet with either the school principal or their child's teacher for individual conferences. The social workers also participate in the individual child conferences and confer with teachers to facilitate a more coordinated parent-child service.

For the most part, the social work activities with families are supportive rather than intensive. In several cases where an obvious need for intensive case work has existed, the mother has refused to cooperate. On the whole, this has not occurred with extremely low-income families but with very young parents, usually students who are either divorced or separated, who resist any effort to involve them in an examination of their behavior or child-rearing techniques. Some of the more successful social work activities have been with the more deprived families, with the child enrolled in the Center serving as the major entre. In at least one rather dramatic case, total family changes associated with social work activities centered around an infant enrolled in the Center have been almost like a reversal of the falling domino phenomenon.

Early Results

Two years is obviously too short a time in which to accumulate definitive data on the effectiveness of the enrichment program. A report (Caldwell, et al, 1966) of the changes in performance on developmental tests is currently in press, and results of that analysis will be referred to only briefly here. Of 29 children ranging in age from approximately 7 months to 43 months at the time of the first examination, all of whom participated in the enrichment program for at least 3 months (mean participation 7.5 months), only 5 children showed a drop in score from the time of the first to the second examination. The mean gain in developmental quotient was 5.6 points. Although some of this might be attributed to practice effects, it is not a likely explanation. In some instances the second examination occurred as much as 13 months after the first one, and for very young children there would not be any overlap in items introduced at the two sessions. Nor can the changes be attributed to familiarity with the examiners, as they were people whom the children saw only infrequently and were not members of the regular care-taking staff. All examinations were done on the Center premises, however, and one could certainly implicate increased familiarity with the Center and with new procedures in general. Opposed to this explanation of the pattern of changes, however, is the often reported tendency for children from low income homes to show

a gradual drop in performance level after approximately 18 to 24 months of age. The fact that the children showed any gain at all (which was significantly different from zero as indicated by a t test) is thus an indication of an effect.

There were wide individual differences in gain scores, ranging from -27 to +26 points. Only one of the negative change scores was greater than 10 points, whereas eight of the positive change scores were greater than 10 points. The distribution of change scores tended to be positively correlated with rated extent of deprivation experienced prior to being enrolled in the enrichment program (i.e., the most disadvantaged children tended to show the largest gains), but the coefficient was of insufficient magnitude to be considered statistically reliable. Contrary to advance expectations, there were no apparent differences in change scores as a function of age of child at the time of admission into the program.

For intermediate evaluations, it has not been possible to identify and follow at the same time intervals a precisely matched control group. Subjects from the on-going longitudinal study comprise the major control group, but these are all approximately one year younger than the youngest children enrolled in the original Children's Center group. However, the authors have for several years been following and testing every six months another group of low-income children in a study primarily concerned with patterns of mother-child interaction as related to personal-social development (Caldwell, et al, 1963; Caldwell and Hersher, 1964). This study draws from the same type of population (persons in attendance at a city-sponsored well baby clinic) as those of the current Children's Center group, and they are given developmental tests every six months. Figure 3 presents data on children from the three basic classes of the original Children's Center population and on this group of 16 children who have been followed and observed (often by the same staff) but not enrolled in the enrichment program. The only children included in the Children's Center curves were those who had participated in the

Insert Figure 3 about here

enrichment program for approximately one year. The children from the comparison group were those (out of 25 still active in the study) who had been examined on or near their first, second, and third birthdays. As can be seen in Figure 3, the children from the non-intervention low income sample showed a gradually dropping developmental curve. All three enrichment groups showed gains, though the slopes

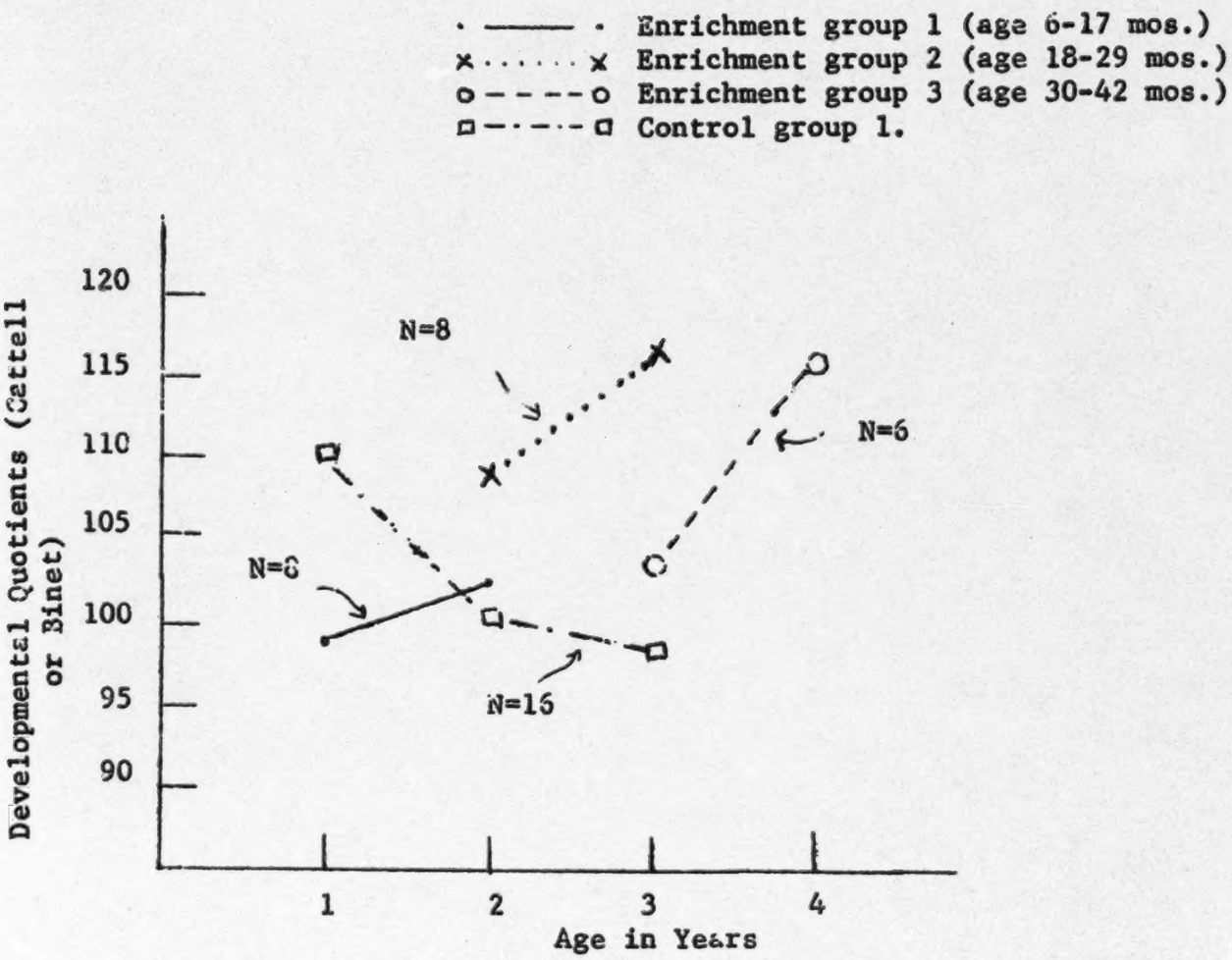


Fig. 3. Mean quotients earned by three groups of children participating in an enrichment program and one control group on consecutive yearly evaluations.

for the three groups are not identical. In relation to the major hypothesis of the study about the most advantageous time for beginning an enrichment program, it would appear as though the three- to four-year group showed the most dramatic rate of rise and that the youngest group showed only insignificant gains. This may well be the case, but more time and more cohorts of children exposed to this or similar programs will be necessary before the question can be answered. The scatter in the initial means of the four groups illustrates the sampling error typical for such small groups and strengthens the need for larger and replicated groups.

To be sure, there were decided differences in characteristics of these three enrichment subgroups. For some reason, the two-year entering class contained an unusually bright group of children, but instead of showing any sort of regression toward the mean the average quotient in this group climbed slightly more than seven points. The relatively low initial score of the infant enrichment group in relation to the relatively high one-year mean quotient for the control group is interesting and warrants explanation. The Center had been in operation about six months when this group of infants was taken into the program, and by that time children in dire need of some kind of environmental support were being referred. One infant was the daughter of a severely mentally retarded woman who had one other retarded child; two of the children were referred by their mothers as being slow or retarded; one was an under-three-pound premature baby who had (and still has) considerable muscular coordination problems. Whenever one of these referrals had to compete for an opening with a child who had no outstanding personal or family problems, such a child would be given preference in the selection. As long as the Center is as small as it is, this type of over-weighting of the sample with problem-laden children is likely to continue. This point merely emphasizes the need for the operation of a larger number of such programs with acceptance being more random and less influenced by family need in order to make the application of statistical tests more appropriate. Suffice it to say at this point that all assessment data in the area of intellectual progress are reassuring and that there are grounds for continued optimism.

Socio-emotional Development

As criteria for normal, healthy socio-emotional development are not as clearly established in our culture as are those for intellectual development, and as most of the existing assessment techniques are not appropriate for children under three

years of age, it is difficult at this juncture to offer anything other than anecdotal evidence about the socio-emotional development of the children. Furthermore the staff could perhaps more readily be biased in their judgments in this area than in the cognitive sphere. Accordingly we have relied heavily upon consultants to appraise the social and emotional development of the children. Partly because of the novelty of the program, and partly out of a need to reassure themselves, many of the nation's leading specialists in child development, child welfare, pediatrics, and child psychiatry have visited the Children's Center during the past two years. Probably the best summary of the reactions that have been obtained is that, in spite of the extreme degree of social pathology in the homes from which many of the children come, they are refreshingly healthy and normal little children. To some extent, this may be a function of the young ages of the children. Until the older groups were added to the program in the fall of 1966, there was not a single true "problem child" on the premises. Now there are several, particularly in the three-year group, and two of these are carry-overs from last year's two-year group. There is one relatively severe behavior problem in the four-year group and steps are currently being taken to encourage the mother to seek therapy for this child.

Several concerns have been voiced by the consultants. One felt that there was too much immediate need gratification for the children and that, in some respects, budding attempts at the development of mastery were aborted. One felt that the former building limited freedom of movement. Another found the children too friendly to strangers and possibly lacking a differentiated social reaction. However, all have concurred that none of these constituted a real or serious problem and that, on the surface, the socio-emotional development of the children was in no way compromised by their daily maternal separation and the type of care they received in the Center. However, all agreed with the authors that careful long-term follow-up was necessary before any definitive statement could be made.

Parental Reactions

It is perhaps presumptuous to try to speak for the parents whose children are enrolled in the program; some kind of entirely independent survey carried out by personnel with no affiliation with the Center would be desirable. However, it is fair to state that, insofar as can be perceived from our vantage point, the parents are strongly supportive. Several have become staunch community advocates of the value of such programs and of the necessity for establishing them on a larger scale as part of community action against poverty. Three mothers, following their

exposure to the Center staff and philosophy, have enrolled in local courses for teacher's aides and have begun to plan careers in the field. In general we are heartened by the extent to which the parents have grasped the scope and purpose of the program.

But emotional support and participation are often different matters, and the extent to which we have successfully involved parents in the educational program (except where this involvement is a part of more intensive case work) is limited. Reasons for this are not hard to find. The working mother with young children of her own does not have a great deal of residual time or energy to dedicate to home-school activities, most of which must be scheduled for evening hours at which time fatigue is long and attention is short. Some of the mothers have days off during the week rather than on weekends, and recently we have been attempting to take advantage of this time to arrange parent observations in the classroom, conferences with the teacher, the principal, or one of the social workers. However, a day off during the week means work on the weekends, and household chores cannot be put off for too long.

Many of our evening parent interviews are held in the home rather than at the Center. But in spite of the dedication of the staff and the identification with the needs and problems of our families, an occasional fragment of middle-class bias can be found. Recently one of the staff remarked to a person who was scheduling an evening home visit into a very poor neighborhood, "Aren't you scared to go there by yourself at night?" The young woman replied, "If they can live there all the time, I guess I can go there once in a while without harm." The solicitous inquirer was properly chastened.

Occasionally because of staff zeal about their work, a bit of peremptoriness toward the parents will creep in. For example, a group of teachers recently requested that a policy be established that parents could not bring their children after 9:30 in the morning. When this happens, the late child often seems frustrated that he has missed something from the earlier period and tries rather frantically to do everything in a shorter period of time that he would ordinarily do in the full period. In addition, these late arrivals often disrupt on-going activities and draw the teacher's attention and time away from the other children who are already busily engaged in other activities. After a discussion of the possible reasons why a mother might get her child there late (her failure to appreciate the importance of the program, her own fatigue, long-standing habits of a casual

attitude toward time, delays necessitated by getting other children ready for public school, etc.) and our concern with encouraging regular attendance, the teachers withdrew their request.

Some of the things parents do or fail to do can be frustrating to the teaching staff. For example, many parents ignore the repeated request to send outdoor clothing in with the children. Although a few spares are always kept on hand, it is difficult to have comfortable and well-fitting outer garments for all the children. Thus failure on the part of the parents on this item may mean that all the children in a given group may be deprived of the opportunity to play outdoors. Similarly, a few children come in very dirty and must be bathed by one of the teachers before the child can function in his group. As previously stated, some parents will send a seriously ill child into the Center, or else will fail to come and get one who becomes quite ill during the day. Although a small area has been set up as a sick bay, it is difficult to care successfully for children who are really ill without having one person who can be kept free to cover this assignment.

On the whole, however, the parents and teachers cooperate well with one another; the teachers respect the difficulties under which many of the parents have had to rear their children, and the parents respect the extra advantages that the teachers can give their children. In our experience, the low income parent who is unconcerned with his or her child's education is more a myth than a reality, and one of the Center's aims is to help devise ways of translating that concern into effective action.

Summarizing Thoughts

By now it is apparent that everyone in any way connected with the Center has unbridled enthusiasm for the project. Most crises have been manageable and fortunately minor--or at least they can be thus described after all the dust has cleared away. There has been one automobile accident, with mercifully only minor injuries. The Center driver was exonerated, and he has continued to drive for another year with no difficulty. Fortunately there have been no major health crises. Apart from one round of the highly contagious chicken pox and the chronic URI which is endemic in this part of the country at least during the winter months, there has been nothing to contraindicate having children in this type of group program. However, were it not for the ever greater number of childhood diseases for which effective immunization is developed, the possible values inherent in such a program might well not be worth the cost.

Staff morale has had its peaks and valleys. Until the summer of 1966, there were fortunately no changes in major care-taking personnel. However, at that time two head teachers moved from the city, and large numbers of new persons came in with the expansion of the program. The move to the new quarters brought its share of trauma, as did the addition of a fairly large number of new children in a rather short period of time. Even though the adult-child ratio remained constant, there seemed to be a new atmosphere associated with the new size. The noise level went up; the traffic flow intensified; and for a month or more a feeling of confusion possessed the staff. Like an adolescent who seemed to be growing too fast, we did not always know what to do with our hands and feet. No one was sorry when the new quarters proved not quite large enough for the contemplated 100 children and enrollment stopped at 80. Now, with more experience in handling the larger number of children, we are ready to pursue the three-digit number once again. When one considers the inevitable attrition rate, and considers in addition that interim results (i.e., before all participating children reach some meaningful evaluation point such as first grade or third grade) must be evaluated separately for different age groups, even 100 children is a small sample. The authors hope that eventually it will be possible to pool data with those obtained in other similar centers which are starting or will soon be starting in order to determine more conclusively the results of such early enrichment experiences. Furthermore, it would be highly desirable to have evaluation teams from various communities exchange services from time to time, thus removing any possibility of bias in measuring the effects of the enrichment offered in any one program.

In many ways, the most challenging aspect of the total program has been the attempt to devise an optimal daily regimen for the children. To paraphrase Mark Twain, everyone has been talking about infancy but no one has been doing much about it. Furthermore, the cry for the launching of enrichment programs for young disadvantaged children has been so urgent that enrichment programs have been operationally defined in an all too casual way--i.e., an enrichment program is a program that calls itself an enrichment program. But hanging out a shingle announcing that one intends to enrich, and creating an atmosphere and a congeries of experiences which in truth do enrich the child are not necessarily the same things. There is still so much to be learned about creating growth-inducing conditions that we look now upon our own initial formulations (Caldwell and Richmond, 1964) as simple-minded and naive. Of course, until diverse programs are in operation,

the most one can hope to do is demonstrate that <u>some</u> enrichment is associated with more of an effect than <u>no</u> enrichment. That demonstration, of course, is the first and most basic step.

We now see our project as an experiment in social action with the most profound implications. To a great extent, social welfare programs are of necessity exercises in shoring up unstable structures. Even so, they are expensive and require extensive public tax support. The massive environmental modification offered in a program such as that of the Children's Center is also costly. Furthermore, it also has limitations, as it cannot go beyond the environment and whatever powers for shaping development are inherent therein; the undoubtedly powerful genetic influences which also help to shape development cannot be touched. But the potential power of such programs to perform a truly preventive function, to aim toward anticipation rather than amelioration, deserves careful consideration in the current search for instrumentation of community supports for creative and effective social living.

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Appendix A

A "Typical Day" for children in each of the Children's Center Subgroups*

Approximate Times	Infants (roughly 6-18 months)	Toddlers (18-30 months)	"Striders" (30-40 months)
7:30	Children arrive individually or in small clusters; same is true of staff. All early arrivals go into same group. Each child is greeted warmly, talked to, undressed (and changed if necessary). Although this is technically a free play period, there is a great deal of individual attention. Much lap-sitting, reading to one or two, taking child along while teacher prepares for day's activities, etc. As other staff and children arrive, children go to their own "home territory."		
9:00	Receive, greet, change babies. (All babies are changed upon arrival, with the hopefully clean diaper set aside for them to wear home.)	Nourishment and story (group together). In this group the only full-group reading is during the time the children are seated for their snack. At conclusion they move about, then are divided.	Greeting, establishment of group. Informal roll call and discussion of activities done the day before and planned for this day.
9:30	Nourishment (juice, milk, crackers, cookies, dry cereal, occasional full breakfast), conversation.	Special project (group divided), usually involving fine motor coordination--e.g., finger or chalk painting, stringing large macaroni, making pudding, playing with clay, shaking glitter on surface, making hand print, etc. Children leave table as they finish.	Story and snack. Snack is often a "buffet" with finger foods (carrot sticks, celery, apple slices), peanut butter or cheese and crackers. Story read after children finish eating. Special cognitive or creative activity. May be many things, will vary with topic being emphasized. Includes puzzles, art work, beads, cylinder blocks, mosaics, pasting cut-outs, etc. May also include demonstrations--e.g., pediatrician "examines" doll.
10:00	"Special" project, usually one that can be done in feeding chair with all children in same area, (e.g., egg white painting, feeling hot and cold water, nesting blocks or cups, playing with toys having distinct textures, etc.).	"Surprise" period. Teachers show children something "spectacular"--blows balloon, offers turtle, lights and extinguishes candle, etc.	
10:30	One-to-one period; activities arranged to fill individual needs. One child may be "walked" about building; 2 walked in strollers (outdoors in good weather); 2 to be read to; one to be encouraged with "Baby's eyes, nose," etc.; one to have special puzzle; one big spools--little spools, etc.	"Rambunctious" period. Large muscle toys are made available--roll toys, walking board, slide, wagon, trucks. Records may be played; children play with one another, interact with teacher in special individual ways. During this time all are toileted and dressed to go outside.	Free play, children all together, with wide range of toys available to choose from--roll playing toys, books, blocks, etc. If field trip is scheduled, it will occupy both this and preceding period. Sometime during period, children will be toileted.
11:00	Change; play records; bring and serve lunch; clean up; prepare for nap.	Outdoor play, or play in basement. Wide array of equipment available.	Outdoor play, or play in basement. Climbers, tricycles, swings, push toys, sand box, etc. available.
11:30		Change or toilet, wash, put bibs on for lunch.	Clean, toilet, and bib up for lunch. Lunch. Children eat in one group.
12:00	Nap time; teachers and nurses have lunch. (Even though this period is thought of as nap time, not all the babies are asleep throughout the period. They go down and awaken at different times, with more variability in the time of waking. All are rocked either before or after nap. Babies who do not sleep receive individual attention--games, simple books, may sit in on teacher's meeting, etc.)	Lunch. The children eat in one group, sitting at small table.	
12:30	Teachers fill out records, clean up play area, etc.	Toileting and diapering, clean-up, preparation for nap.	Washing, toileting, and brushing of teeth. Children lie down on cots as they get ready for nap. Teachers pat, sing softly, etc.
1:00			Nap time. Most children in group sleep very soundly for full period. One teacher remains on observation duty. Teachers meet to plan program, prepare for later activities, clean up room, etc. As children awaken they go into extra room, receive individual attention, rocking, special story, are toileted, etc.
1:30		Nap period, wide variation in ease of going to sleep and duration of sleep. Some drop off instantly; others need patting or singing or rocking. Last one to sleep around 2:00, first one awake around 2:30. As children awaken, they are taken into adjoining room and rocked and cuddled, changed, read or sung to, etc. One teacher stays on observation duty. Teachers meet to discuss program, keep records, clean up area, etc. Only one room available, as one or two children might sleep until 3:30.	
2:00			

Appendix A A "Typical Day" for children in each of the Children's Center Subgroups* (Continued)

Approximate Times	Infants (roughly 6-18 months)	Toddlers (18-30 months)	"Striders" (30-40 months)
2:30	Awake, "nuzzled," changed (diaper changing time is an important one for learning activities; adults consistently talk to, smile at, peek-a-boo with, hold up to windows to observe outside goings-on, etc.		Free play. Children are still "waking up." Large assortment of both small muscle and large muscle toys available for choice.
3:00	Nourishment	Individual learning activities--reading target (vocabulary) books, shape puzzles, cylinder blocks, nesting boxes, hide and find games, small table blocks, etc. These activities may follow rather than precede snack if all children awake.	Snack and group story. Also group singing.
3:30	"Floor play." (Activities vary with weather. Children may be taken outdoors for sand box, water play, swings, crawling in grass, etc. For indoor play, "large muscle" toys will be made available.)	Snack and story. May be offered outdoors in summer.	Structured active play. Activity record, ring games, bean bag game, marching, rhythm instruments. May go outdoors in good weather.
4:00	Children leave at different times during this period; same for staff. Older children are brought into baby area to wait for parents, driver, etc.	Individually guided play. By this time of day the children may be tired (as will be the staff). Some children will require outlets for vigorous activity, but often cannot take completely "free" play at this time. Thus action songs, marching and rhythms, ring games will be organized. Other children will want to be held and rocked.	Cognitive or creative activity. By this time, most of the children have gone. The head teacher who remains uses this as a time for playing special lotto-games, puppet stories, art activities, etc.
4:30	Children are encouraged to play by themselves as much as possible during this time. Staff try to talk at least briefly with parents as they come to pick up children--exchange anecdotes, discuss problems, etc.	Preparation for departure or regrouping, changing and dressing. Children who stay late will be combined with children from other groups.	Preparation for departure. Toileting, practice in dressing, cuddling, and individual stories. Children who leave very late combined with other groups.
5:00 to 6:00			

* The amount of time during which children are free to select their own activities is under-represented in the table. E.g., though 30 minutes may be allowed in the schedule for toileting or changing, this takes only five minutes or so for any particular child. Thus these periods are also essentially free periods.

Footnotes

1. Professor of Child Development and Education, Syracuse University, and Director, Children's Center.

2. Dean, College of Medicine and Chairman, Department of Pediatrics, Upstate Medical Center, State University of New York, Syracuse, New York.

3. In referring to their program, the authors appear to have a bit of semantic confusion regarding its appropriate designation. Originally it was called a day care center, and it does indeed function as one. However, it is also a nursery school, even more so now with the addition of the half-day group. The verbal children all seem to refer to the Center as their school, and the parents tell their children that they are going to school. Furthermore, the teachers like to think of themselves as teaching in a nursery school. Therefore we have adopted the practice of generally calling it a nursery school, although we are just as likely to refer to it as a day care center. Will the reader please be assured that we are talking about the <u>same</u> program, which, when we are being formal we refer to by its title, the Children's Center, and when we are being technical by the term, the enrichment program.

4. It is taken for granted that anyone wishing to start a similar program knows that the very first step necessary after the selection of a possible site is to consult officials of the local fire and health departments regarding site suitability. Also for a licensed day care facility the standards established by the Child Welfare League of America (Booklet J-46) must be met. Similarly the State Department of Education in most states will have requirements of staffing and space. As none of these organizations has official standards or even officially sanctions a program for children under three, the Children's Center is not licensed. However, letters are on file from the Syracuse Department of Health, the New York State Department of Social Welfare, and the New York State Department of Education acknowledging the existence of the program as a research operation and indicating interest in being kept informed of progress.